

REMARKS

In the Office Action, the Examiner states that claims 1-6, 11, 12, and 16 are currently pending and not withdrawn. All of these claims are ultimately dependent from claim 1. In the above Amendment, claim 1 has been amended to include, in particular, the limitations of claims 2, 5, and 11, as well as further limitations. Claim 1 as amended is now narrower than claim 5 as originally filed, which is cancelled. The following arguments will thus effectively relate to the rejections of claim 5 as originally filed.

Claim 1 has been rejected under **35 USC 101** as failing to recite a useful, concrete, or tangible result. In the above Amendment, it is now recited in claim 1 that the image data is associated with an MRC selector plane; this added limitation is that of originally-filed claim 11 (which has itself been cancelled). Claim 11 was not rejected under 35 USC 101; and as this limitation has been added to claim 1, the rejection of claim 1 is obviated in view of the Amendment.

Claim 1, along with its dependent claims, has been rejected under **35 USC 102(b)** under each of various references. As mentioned above, claim 1 has been amended to include the limitation of at least claim 5 as originally filed, and so these rejections, which do not include claim 5, are now deemed moot.

Claims 5 and 6 as originally filed have been rejected under **35 USC 103(a)** as obvious over MacLeod in view of Huttenlocher. As mentioned above, claim 1 as amended now includes the limitation of claim 5 as originally filed.

As mentioned in the rejection, the primary reference, MacLeod, is silent with regard to the claimed "variable indicative of whether the image data have been previously altered." The rejection then points to the text describing Figures 13A and 13B in Huttenlocher for this teaching.

Turning first to the basic invention of the amended claim 1, the invention is directed to "segmenting" a file of image data between a first data subset and a second data subset, as would be used in an MRC rendering of the image data (this MRC aspect of the invention, recited in claim 11 as filed, is now recited in claim 1). If the image data defines a "hole" of data associated with the first subset, surrounded by an "island" associated with the second subset, which in turn is surrounded by data of the first subset (as can be seen, for instance, in FIG. 3A as filed), any straightforward segmentation algorithm, going through the image data line by line, or window by window, essentially by brute force, will experience confusion, as shown in FIG. 3B and described at page 4, line 11-page 5, line 5.

In brief, the claimed invention overcomes this specific problem by "remembering" if any pixels, such as along a given line or in a given window, have previously been "flipped" or "altered" (i.e., switched in association from one subset to another) in the course of segmentation. For reasons described in the Specification as filed starting at page 6, line 13, retaining the information about previous flipping or "altering" is useful in overcoming the segmentation error of FIG. 3B.

Looking at the Huttenlocher reference, cited for showing the claimed "variable indicative of whether the image data have been previously altered," one sees in the discussion of FIGS. 13A and 13B a determination of whether a pixel subject to an algorithm is initially white or black; and then, if the pixel is black, the algorithm is applied to it. Although the disclosure includes allusions to a number of image-processing techniques, a person of skill in the art reading Huttenlocher would not combine it with MacLeod to yield the claimed invention because:

- a) The claimed invention is *explicitly* directed to use in an MRC segmentation plane. Huttenlocher is directed to optical character recognition (OCR), and avoiding errors in determining the *shapes* of image portions, such as letters and words, as well as isolating stray marks (see, for instance, column 6,

lines 7-18). A person of skill in the art would not consider OCR relevant to an MRC selector plane, as with either the claimed invention or the primary reference, MacLeod.

b) The claimed invention is explicitly directed to addressing a specific “hole within an island” image segmentation problem, such as shown in FIG. 3A as filed. Such a problem is not remotely addressed by Huttenlocher. Although some Roman characters arguably include a “hole within an island” feature, there is no evidence in Huttenlocher that these characters present any special problem relevant to what the reference is discussing.

c) Although Huttenlocher, in the passage cited in the rejection, describes an operation in which, under some conditions, a black pixel is “updated” to be white (column 16, lines 48-53), this operation is intended only to clarify the boundaries of, for example, a character shape, and there is no mention of the aspect recited in claim 1, “taking into account the variable indicative of whether the image data has been previously altered.” In other words, although the Huttenlocher technique occasionally will change a pixel from black to white, the method does not check if the pixel had already been changed, for instance, from white to black, earlier in the algorithm. The idea of not only altering image data, but keeping a record if the data had previously been altered, is not taught by Huttenlocher; nor does Huttenlocher teach why such an idea would be desirable. The idea is desirable in the claimed invention, because it helps overcome a specific, and recited, “hole within an island” problem.

For these reasons, Huttenlocher cannot be combined with MacLeod to yield the invention of claim 1, because Huttenlocher does not teach the aspect of claim 5 as originally filed (and which is now incorporate in claim 1).

The claims are therefore in condition for allowance.

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In the event the Examiner considers personal contact advantageous to the disposition of this case, he is hereby requested to call the undersigned attorney at (585) 423-3811, Rochester, NY.

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